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ABSTRACT

Five years ago, the TI-IN Network launched the first private long-distance interactive television network. Via satellite, it now beams live televised interactive courses taught by master teachers to thousands of high school students scattered across 29 states. Begun as a public and private joint venture with the Education Service Center Region 20 in San Antonio, TI-IN has grown to be a leading force in distance learning. The number of TI-IN school sites is approaching 1,000, and revenues are expected to hit $12 million this year. In 1984 the Texas legislature required that school districts provide any course requested by 10 students or more. TI-IN offered a cost-effective alternative to small rural districts, with the cost of electronically importing courses running one third to one half of a resident teacher's salary. Today, two channels of simultaneous programming (17 courses/2,000 hours a year) are broadcast to satellite dishes at school sites. TI-IN also provides 200 hours of staff development programming, some of it for college credit. This year, TI-IN high school classes will also be available through cable television in many parts of the country. TI-IN's live interactive programming will be a part of a 24-hour cable education channel called Mind Extension University, which will also offer undergraduate and graduate courses. This article contains vignettes about students, teachers, and teaching methods. (SV)

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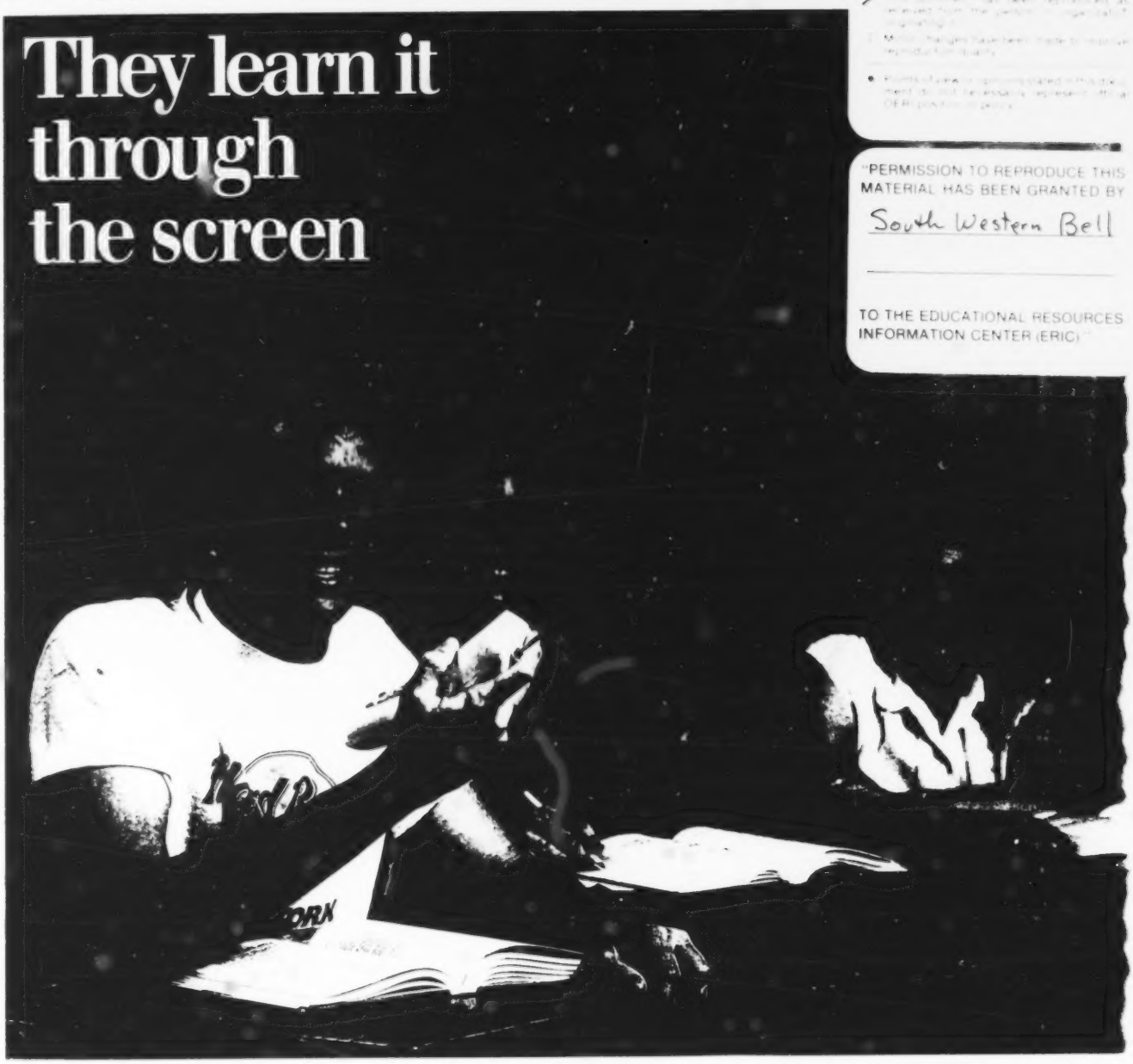
Technology gives kids an education . . .

They learn it through the screen



Chad Wilson talks with a distant teacher during a Latin class at Liberty Hill High School

By William G. Smith

Ever so quietly, a minor miracle is occurring in education from a most unlikely quarter: television.

From Nevada, Texas, to Eddyville, Oregon, to Bethunesville, North Carolina, bright teenagers are interrelating through The Tube with outlandishly innovative teachers they've never even met personally. At times these teens seem almost as entranced with such exotic subjects as astronomy, marine science, and Latin as they might be with a Rod Stewart video.

Chalk it all up to the remarkable rise of distance learning, a new wrinkle on a relatively old technology, interactive TV. The initiator here is TLTN Network Inc., a San Antonio–based company that five years ago launched the first private long-distance interactive TV education network. Via satellite, it now beams live television interactive courses taught by master teachers to thousands of high school students scattered across 26 states. The network is growing like a weed, having more than tripled its

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size in just the past two years.

In Moran, Texas, for example, James Green graduated from high school in 1989 in a class of *three*. As a junior and senior, he took tough TI-IN courses like trigonometry and elementary analysis that otherwise would have been unavailable in the town of 335 inhabitants, helping pave the way for his admission as a premedical student to California's Humboldt State University.

In Poteet, Texas, a high school senior who has had four babies since getting married in the eighth grade has stuck it out with her TI-IN math classes. Maintaining a 95 percent average, she is aiming for college. North of Austin in Liberty Hill, 15 perky teens roll out of bed before dawn, sometimes after having been up late the previous night for a school game, to arrive sleepy-eyed but upbeat for a 7 a.m. Latin class.

In South Texas, Robert Garcia, principal of Ben Bolt-Palito Blanco High School, expects TI-IN offerings such as physics, French, and sociology to be instrumental in making his predominantly Mexican-American students more upwardly mobile.

"We feel that the network has put us on the same level academically as almost any high school in Texas," Garcia says. "Time was when the opportunities for our young people were limited pretty much to finding a job in the local oil fields or in farming. Last year we sent our top three graduates to Incarnate Word (College), UTSA (University of Texas at San Antonio) and the University of Houston. And we have a senior, Jaime Castillo, who aspires to study engineering at Princeton."

TI-IN was made possible by a group of venture capitalists interested in helping to educate our youth. Forged as a joint public/private venture with the taxpayer-supported Education Service Center Region 20 in San Antonio, TI-IN has grown to be a leading force in distance learning.

The number of TI-IN school sites, or "downlinks," is approaching 1,000, up sharply from 260 in 1987. Revenues this year are expected to hit $12 million, more than twice last year's $5.3 million. After accumulating four years of losses, the company is projected to turn the profit corner in 1990.

Initially, TI-IN couldn't have begun bouncing its signals off GTE's Spacenet II satellite too soon for 52 sparsely populated school districts in Texas. In the wake of the stiffer curriculum requirements mandated by the state's 1984 public education reforms, many such cash- and teacher-poor rural districts faced possible extinction had TI-IN not gone on the air as a cost-effective alternative.

One provision of the legislature's House Bill 72 was that if 10 students in a school district request a particular course, such as trigonometry, the district is required to offer it whether its student body numbers 100 or 100,000. Suddenly that laid an onerous burden on rural districts generally with 500 or fewer students. The cost of electronically importing TI-IN courses (typically $9,000 a year after an initial $7,650 to $9,500 setup charge for a satellite antenna and related equipment) runs from one-third to one-half of a resident teacher's salary. TI-IN later expanded its downlinks beyond Texas.

Two channels of simultaneous programming (17 courses/2,000 hours a year) are broadcast from the Region 20 studios near downtown San Antonio—and other studios in Illinois, Louisiana, Washington, Mississippi and California—to satellite dishes the network installs at school sites.

When school bells ring this fall, TI-IN high school classes also will be available through cable television in many parts of the country, making TI-IN the nation's first interactive instruction available to schools and homes. Students, teach[illegible]nd administrators will be able to parti[illegible]TI-IN's live, interactive programming [illegible]h will be part of a seven-day-a-week, 24-hours-a-day, ▶

German teacher Kathy Horvath is almost like a TV producer in the TI-IN Network studio in San Antonio.

On the screen at Liberty Hill, Kathy Horvath and teacher Lonna Wilson.

cable education channel called Mind Extension University (ME/U), The Education Network. In addition to TI-IN's impressive line-up of programs, a variety of for-credit undergraduate and graduate courses will be available through ME/U, a 24-hour cable and satellite TV network headquartered near Denver, Colorado.

This being two-way audio, one-way video, the students can see the teacher on the monitor and they can talk to each other, but the teacher cannot see them. A talk-back system allows any student, by touching a button on a cordless phone, to ask questions and interact with both the instructor and other classmates across the U.S. over toll-free long-distance lines.

Students take exams and turn in homework just like their regular classes.

The TV monitor sits atop a cabinet crammed with electronic gear called an AVI (audiovisual unit), including a printer that periodically spews out quizzes and homework assignments. An adult facilitator simply collects completed materials and sends them for grading to the teacher in San Antonio. Teachers devote off-air time—including evening hours—to toll-free phone calls from students needing extra tutoring.

TI-IN does far more than enhance the curricula of the mere fraction of the total school population residing in short-handed rural districts. Equally vital is helping teachers teach better. The network offers numerous school districts both large and small 200 hours of staff development programming, some of it for college credit. Instruction via satellite enables teachers, administrators, and support staff to cut down on the long-distance travel required to obtain such training.

Participants are able to interact with experts on everything from classroom discipline to handling dyslexic children, as well as with such presenters as Dr. Madeline Hunter, a noted author and professor of education administration. "For some districts, bringing in a speaker of Dr. Hunter's caliber for a day or so would blow their in-service budgets for a whole year," says Sheila Nicholls, Region 20 director of telecommunications. Moreover, TI-IN transmits televised student enrichment options for grades kindergarten through 12 that range from drug abuse prevention to expressing creativity through puppetry; performances by Brazilian and Puerto Rican bands; a series on communicating through sign language; and how to cook *antojito*, a Mexican appetizer.

Distance learning has its obvious drawbacks. "It is no panacea. Certainly it's not a substitute for teachers in their classrooms with their students. We supplement, not replace," says Lloyd O. Otterman, TI-IN's chairman and CEO.

Still, there are compensating factors. Because most TI-IN students are college bound, they tend to be more receptive, motivated learners than many of their non-TI-IN classmates. TI-IN student failures are said to be few and far between, and absenteeism and disciplinary problems are minimal. (Classes are videotaped for later viewing by pupils who have missed them.)

How do you teach youngsters hundreds of miles away? With a deft blend of creativity, personal warmth, and histrionics. TI-IN's 16 teachers, many with master's degrees, seek

to capitalize on TV's very nature as a powerful visual medium to bridge the distance gap and create their own brand of "electronic touchy feely-ness."

For instance, Spanish teacher Susan Altgelt, while showing a videotape of Madrid, will turn down the sound and ask her pupils to describe what they see—en Español. To illustrate certain social patterns, sociology and psychology teacher Patricia Riley bursts on the small screen dressed as Tish, a wayward adolescent replete with pink hair, gaudy earrings, black leather jacket—and with bubble gum firmly in cheek.

"We try to break down regional stereotypes," says Riley, "TI-IN can be a strong, natural unifier. It allows American Indian kids in South Dakota, cheerleaders in the Texas oil town of Giddings, and Midwesterners in Warsaw, Illinois, to learn from each other. They can all see firsthand, rather than just from textbooks, that despite local cultural differences, kids are pretty much the same the country over."

Some teachers award lifesavers to students who do exemplary on-air work. On Halloween, teachers are apt to disguise themselves as characters like Mr. Spock and Superwoman.

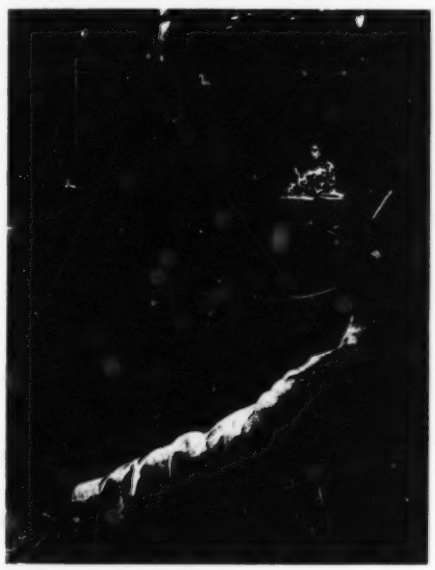
The teachers are able to overcome the lack of personal student contact by alerting themselves to verbal cues. With the talkback system always on, teachers learn to pick up on a student's *tone* of voice as much as on his or her words. "I got it" usually means just that. "I think I understand" often means the student doesn't quite get it. If there's any doubt in the voice, the teachers begin probing.

All of the teachers periodically leave the TV studio for face-to-face rapport with their pupils. Some teachers have even been asked to be commencement speakers for schools such as Moran, Texas, which had a graduating class of three.

Using an array of high-tech gadgets, TI-IN teachers function somewhat as TV producers. They can switch cameras, zoom in, turn on an overhead projector, write the lesson topic on a pad that is the equivalent of an on-air chalkboard and can project slides, VCR tapes, and computer-generated messages over the air.

Distance learning classes also are great levelers, resulting in numerous cases in which students with poor prior records have blossomed academically. "It's like being in college. Everyone starts with a clean slate and on the same level," says Emily Stohler, an assistant to the superintendent of schools at Liberty Hill. "There are no negative expectations because the teacher doesn't know any youngster's background."

A visit to the predawn Latin class at Liberty Hill can be an almost eerie experience. Here were 15 teenagers intent on learning about early Roman culture—the Coliseum, the Circus Maximus—from Cindy Pope, a highly popular, award-winning teacher. "This being Friday, after a busy week, we'll first get serious, then have some fun," Pope says with an infectious smile. She splits the class into groups to translate paragraphs from Latin. Much of the time, a girl wearing a Texas Aggies T-shirt and holding a cordless phone served as her classmates' interface with Pope.



From the control room at TI-IN studio looking in, David Gonzales and Spanish teacher Susan Altgelt.

A girl from Colorado thanks the teacher for yesterday's "neat" time-machine graphics that enabled the class to "travel" back to ancient Rome. The Coloradoan and kids in Iowa, Kansas, and North Carolina indulge in occasional friendly small talk.

Following the translation exercise, Pope presides over a lively Latin version of the Pictionary game. For certain students, according to Stohler, Latin is far from a dead language. "We've had cases where studying Latin has raised youngsters' SAT scores," she reports. Last fall, Liberty Hill's class presented a play that was telecast to the 7 a.m. Latin class across the network.

TI-IN chief executive Otterman believes that distance learning is still in its infancy both in terms of technology and usefulness. Otterman's extensive experience in publishing and educational products marketing causes him to foresee TI-IN tripling its number of school downlinks to some 3,000 in the foreseeable future.

"These would be predominantly isolated school districts that genuinely desire to invest in improving themselves academically in what has become a national crisis, and they see TI-IN as a way to do so," notes Otterman, himself a former teacher.

"Beyond this, we see the network enabling TI-IN schools to become major community learning centers for adults as well as school-age children. The continuing-education function being fulfilled by junior or community colleges in urban areas is not generally available in these smaller towns. Besides providing student enrichment along with upgrade training for educators, why not continuing education for professionals such as physicians and accountants? What about familiarization or advanced courses for adults in computers and foreign languages? Why not an update for retirees on Medicare and Social Security? The list goes on." ■